

Validity and reliability of the fear of COVID-19 scale (FCV-19) in Turkish pregnant women

Turkish version of COVID-19 fear scale (FCV-19) in Turkish pregnant women

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Abstract

Aim: The emergence of coronavirus disease 2019 (COVID-19) has not only create international concern, but also caused panic, fear, and an increase in mental health problems among individuals. Fear of COVID-19 Scale (FCV-19S), developed by Ahorsu, was previously reported as a valid psychometric instrument for the assessment of COVID-19 fear among individuals. Validation of the scale among other high-risk groups like pregnant women may help obstetricians develop better coping skills during the pandemic.

Material and Methods: This cross-sectional methodological study included 277 pregnant women admitted for routine follow-up at the outpatient obstetrics clinic of Liv Ankara Hospital, Turkey. Participants were asked to complete the Turkish version of the Hospital Anxiety and Depression Scale (HADS) and FCV-19S. Statistical analysis was performed using SPSS 25 software.

Results: The mean FCV-19S score was 19.2 ± 5.7 (range: 7-35). Cronbach's alpha for internal consistency evaluating the reliability of FCV-19S, was 0.857, revealing a satisfactory internal consistency. According to the correlation matrix analysis, all items of FCV-19S showed positive and strong correlations with total FCV-19S scores ($p < 0.001$), and positive and moderate correlations with HADS scores ($p < 0.001$).

Discussion: Turkish version of FCV-19S is a valid and reliable clinical tool to assess the anxiety of pregnant women during the COVID-19 pandemic in Turkey.

Keywords

Fear of COVID-19, Pregnant Women, Turkey, Anxiety

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Introduction

The emergence of coronavirus disease 2019 (COVID-19) has led to a global health burden worldwide. The World Health Organization (WHO) announced COVID-19 as one of the most critical public health emergencies of the 21st century, considering the mortality and morbidity of the disease itself. The rapid spread of the disease and the high contagiousness have not only created international concern, but also caused panic, fear, and an increase in mental health problems among individuals. As of the second year of the WHO announcement, more than 460 million cases were diagnosed, and more than 6 million people died due to the COVID-19 disease (available from: <https://covid19.who.int/>). In recent research on COVID-19 pandemic, it has been well documented that the disease is responsible for precipitating several psychological and mental disorders [1].

Since the beginning of the pandemic, many preventive measures have been implemented. Countries have limited their social life, shifted to home-based work, and applied lockdowns and other strict quarantine measures. However, uncertainties regarding the prognosis, rapid deterioration of the health status in infected individuals, myths, and misinformation caused high anxiety and depression. High-risk groups characterized by high clinical vulnerability for severity and mortality by COVID 19 including patients diagnosed with diabetes mellitus, hypertension, and cardiovascular disease have been another public health concern for governments. [2]. Especially after the emergence of the Delta variant in June of 2021, pregnant women have come to be considered another high-risk group. Based on the data from previous severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV) epidemics, it has been alleged that COVID may be associated with high incidences of spontaneous miscarriage, preterm delivery, and intrauterine growth restriction as well [3, 4]. It is well known that stress and anxiety during pregnancy can trigger a cascade of events that can cause serious mortality and morbidity. Despite the lack of reliable information on pregnancy and its complications during coronavirus infection, COVID-19 is obviously an influential factor in the mental health of the pregnant [5]. Hence accurate and precise evaluation of COVID-19 anxiety during pregnancy has become eminent for the prevention of adverse maternal and fetal outcomes. It has been previously reported that the Fear of COVID-19 Scale (FCV-19S), developed by Ahorsu et al., is a valid psychometric instrument for the assessment of COVID-19 fear among individuals [6]. In this study, we aimed to evaluate the reliability of FCV-19S's validation for use in Turkey among pregnant women.

Material and Methods

This cross-sectional methodological study was conducted at Obstetrics and Gynecology Department of the Liv Ankara Hospital affiliated with Yuksek Ihtisas University in Ankara, Turkey. Pregnant women admitted for routine follow-up visits at outpatient clinics were informed about the study, and written informed consent was obtained from those who accepted. Inclusion criteria were age ≥ 18 years and the ability to understand written and spoken Turkish. Initially, participants were asked to complete a sheet consisting

of basic socio-demographic information. After that, participants completed the Turkish version of the Hospital Anxiety and Depression Scale (HADS) and FCV-19S, respectively translated by Turkish researchers.

The HADS scale is a questionnaire that contains 14 items and consists of 2 subscales: anxiety and depression. HADS has long been proven to be a reliable clinical tool for the assessment of depression and anxiety [7].

FCV-19S is a seven-item scale assessing the responder's fear of a pandemic situation [6]. Within the scope of the primary hypothesis of the study, the data to be collected using the two scales (HADS and FCV-19S) will be subjected to a validity-reliability analysis, and within the scope of the secondary hypothesis, associations between scale scores and demographic and clinical characteristics will be analyzed.

The sample size of the study was determined according to multivariate analyzes described elsewhere by Tabachnik and Fidell [8] by assuming the following parameters: a type I error of 5%; a power of 90%. Consequently, 250 pregnant women were recruited with a 10% non-response and/or data loss rate. Internal consistency was evaluated using Cronbach's alpha coefficient. Pearson's correlation analysis was used for correlations between numerical data. Exploratory factor analysis (EFA) was also performed for examining the underlying structure of the tests. Statistical analysis of the study was performed with SPSS 25 software.

The study protocol was approved by the Ethics Committee of Yuksek Ihtisas University (Date:11/11/2020; Approval No: 2020/13/02).

Ethical Approval

Ethics Committee approval for the study was obtained.

Results

A total of 277 pregnant women were included in the study. The basal demographic characteristics of patients are presented in Table 1.

The mean FCV-19S score was 19.2 ± 5.7 (range: 7-35) (Table 2). The distribution of the responses to FCV-19S items and the distribution of the total FCV-19S scores are shown in Figure 1. The reliability of the FCV-19S was evaluated using Cronbach's alpha for its internal consistency, which was 0.857, revealing a satisfactory internal consistency. Also, the reliability was analyzed using item-total score correlations for FCV-19S and correlations with HADS anxiety and depression scores. The correlation matrix is presented in Table 3.

Accordingly, all items of FCV-19S showed positive and strong correlations with total FCV-19S scores and positive and moderate correlations with HADS anxiety and depression scores.

The psychometric characteristics of the FCV-19S regarding construct validity were evaluated using exploratory factor analysis utilizing principal component analysis. The Kaiser-Meyer-Olkin statistics was 0.83, suggesting the adequacy of sampling for the analysis, and Bartlett's test was statistically significant ($p < 0.001$), indicating that the data matrix was adequate to analyze. The exploratory factor analysis revealed a two-factor structure. The initial factor included the first item of FCV-19S that questioned if the patient had COVID fear, and

the second one included the remaining six items (Table 3). A two-factor structure explained 73.1% of the total variance in the sample population.

Table 1. Basal demographic characteristics.

	Mean±SD	Min-Max
Age (years)	30.1±4.2	19-41
BMI (kg/m ²)	25.4±4.1	16.2-42.5
	n	%
Medical characteristics		
Goiter	27	9.7
Smoking	9	3.2
GDM	8	2.9
Ectopic pregnancy	6	2.2
IUGR	2	0.7
HT	1	0.4
Other comorbidities	47	17
Any comorbidity	90	32.5

BMI: body-mass index; GDM: gestational diabetes mellitus; IUGR: intrauterine growth retardation; HT: hypertension

Table 2. Descriptives of the study measures.

	Mean±SD	Min-Max
FCV-19S	19.2±5.7	7.35
	n	%
Anxiety		
Normal	159	57.4
Borderline	73	26.4
High	30	10.8
Depression		
Normal	215	77.6
Borderline	37	13.4
High	13	4.7

Table 3. Correlation matrix of FCV-19S scale items and HADS anxiety and depression scores.

	FCV-19S Total Score	HADS Anxiety	HADS Depression
	r (p)	r (p)	r (p)
FCV-19S			
Total score	1	0.46 (<0.001)	0.32 (<0.001)
Item 1	0.64 (<0.001)	0.21 (<0.001)	0.22 (<0.001)
Item 2	0.72 (<0.001)	0.33 (<0.001)	0.23 (<0.001)
Item 3	0.77 (<0.001)	0.33 (<0.001)	0.26 (<0.001)
Item 4	0.81 (<0.001)	0.41 (<0.001)	0.22 (<0.001)
Item 5	0.75 (<0.001)	0.32 (<0.001)	0.22 (<0.001)
Item 6	0.70 (<0.001)	0.36 (<0.001)	0.25 (<0.001)
Item 7	0.78 (<0.001)	0.42 (<0.001)	0.25 (<0.001)

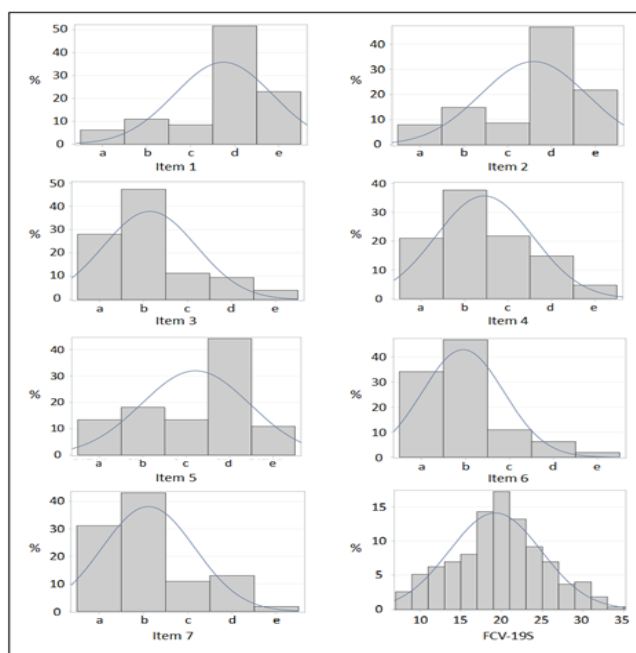


Figure 1. Distribution of the responses to FCV-19S items and distribution of total FCV-19S scores (blue curve indicates normal distribution fit-line).

Discussion

The results of our study show that the fear of COVID-19 scale is a valid and reliable clinical tool to assess the anxiety of pregnant women during the COVID-19 pandemic in Turkey. Previous studies have shown that the psychometric properties of this 7-item scale can adequately and consistently evaluate COVID-19 fear among individuals. The validity and reliability studies of the scale for use in Arabia, Israel, Italy and Eastern European countries were completed in a short period after the original study was published, and in a recent large-scale study Italian version of the scale was also reported to be a reliable and valid tool for assessing the severity of fear of COVID-19 [9]. Although the detrimental effects of quarantine measures on the mental health of individuals have been well documented [10], there are no properly defined preventive strategies for stress and anxiety related to COVID-19. FCV-19S may help in terms of foreseeing the excessive fear related to disease and help in terms of stress control. Previous studies have pointed out the necessity of the scale in terms of maintaining prevention or intervention programs [11-14].

The validity of the Turkish version of the test among pregnant women, ascertained using the HADS test, enables the early prediction of mental instability in pregnant women accompanying emotional instability related to physiological changes of pregnancy during the pandemic.

In another recent study, among medical students in Vietnam, fear of COVID-19 scale was once again confirmed as being a valid and reliable tool to screen for fear during the pandemic. A remarkable finding of the study was how easy access to medical support significantly decreased the severity of fear according to the scale [15].

Considering the correlation between high scores of FCV-19S and HADS, it can also be concluded that higher overall scores on the FCV-19S indicate a more severe fear of COVID-19 among

pregnant women.

The current study has some limitations. Lack of information among patients about coexisting mood disorders or formal diagnoses is the main limitation. Hence, fear may exacerbate the symptoms of those with pre-existing psychiatric disorders, we cannot exclude the role of underlying pathology. The subjectivity of fear may have also interfered with the consistency of the study.

Conclusion

Awareness of COVID-19 fear is crucial for developing better-coping skills during the pandemic. If stress is properly managed, the joy and happiness of pregnancy may balance emotional instability and hence prevent adverse fetal outcomes related to maternal stress derived from fear of COVID-19. Therefore, enlightenment of pregnant women about the risks, prevention strategies, and developing skills for stress management is essential. To the best of our knowledge, this is the first study assessing the fear of COVID-19 during pregnancy. Large scaled studies are required for the assessment of the psychological burden caused by COVID-19 fear among pregnant women.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

None of the authors received any type of financial support that could be considered potential conflict of interest regarding the manuscript or its submission.

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